

CLAIMS

What is claimed is:

- 1 1. A method for improving network efficiency of document transmission from a
2 content server to a user, comprising the steps of:
3 (a) at a condenser located between a content server and a user connected to
4 said content server over a network:
5 (i) receiving a user's request for a document,
6 (ii) said requested document being referencable with respect to a base
7 document associated with a class;
8 (b) automatically obtaining said class;
9 (c) automatically obtaining said base document associated with said class;
10 (d) creating a condensed document by abbreviating redundancy in said
11 requested document relative to said base document; and
12 (e) transmitting said condensed document to said user to enable said user to
13 reconstruct said requested document.

- 1 2. The method of claim 1 where said obtained class in said step (b) allows
2 substantial optimization of an aspect of at least one of said steps (d) and (e).

- 1 3. The method of claim 2 where said optimized aspect is a size of said condensed
2 document.

- 1 4. The method of claim 2 where said optimized aspect is the computational effort
2 required to create said condensed document.

- 1 5. The method of claim 2 where said optimized aspect is a time of transmission of
2 said condensed document to said user.

1 6. The method of claim 2 where said optimized aspect is the effort required by said
2 user to perform said reconstruction.

1 7. The method of claim 1 where said step (b) of obtaining said class includes
2 selecting said obtained class from a plurality of preexisting classes.

1 8. The method of claim 7 where said selecting of said class occurs in accordance
2 with meeting a minimum acceptability threshold.

1 9. The method of claim 7 where said selecting of said class occurs in accordance
2 with meeting an optimization standard.

1 10. The method of claim 7 where said selected class minimizes the sum of differences
2 between said selected class and others of said preexisting classes.

1 11. The method of claim 1 where said step (b) of obtaining said class includes
2 creating a new class.

1 12. The method of claim 1 where said obtained base document in said step (c) allows
2 a substantial optimization of an aspect of at least one of said steps (d) and (e).

1 13. The method of claim 1 where said base document exhibits an enhanced suitability
2 to be a reference for multiple future document requests by virtue of being a
3 function of many past document requests.

1 14. The method of claim 1 where said created base document includes a plurality of
2 frequently requested components from documents associated with said obtained
3 class.

1 15. The method of claim 1 further comprising the step of sending said base document
2 to said user for use in said reconstruction.

1 16. The method of claim 1 wherein said base document for use in said reconstruction
2 is preexisting at said user.

1 17. The method of claim 1 further comprising the step of replacing said base
2 document with a new base document.

1 18. The method of claim 1 where said base document is substantially anonymous with
2 respect to any user.

1 19. The method of claim 1 where said base document substantially lacks content
2 which is confidential to any particular user.

1 20. The method of claim 1 where said request includes identifiers of said user and
2 said requested document.

1 21. The method of claim 20 where said document identifier includes a network
2 location thereof.

1 22. The method of claim 1 where said base document has not necessarily been
2 previously requested by said user.

1 23. A computer-readable storage medium encoded with processing instructions for
2 implementing a method for improving network efficiency of document
3 transmission from a content server to a user, said processing instructions for
4 directing a computer to perform the steps of:
5 (a) (i) receiving a user's request for a document,
6 (ii) said requested document being referencable with respect to a base
7 document associated with a class;
8 (b) automatically obtaining said class;
9 (c) automatically obtaining said base document associated with said class;

10 (d) creating a condensed document by abbreviating redundancy in said
11 requested document relative to said base document; and
12 (e) transmitting said condensed document to said user to enable said user to
13 reconstruct said requested document.

1 24. The computer-readable storage medium of claim 23 where said obtained class in
2 said step (b) allows substantial optimization of an aspect of at least one of said
3 steps (d) and (e).

1 25. The computer-readable storage medium of claim 23 where said step (b) of
2 obtaining said class includes selecting said obtained class from a plurality of
3 preexisting classes.

1 26. The computer-readable storage medium of claim 23 where said step (b) of
2 obtaining said class includes creating a new class.

1 27. The computer-readable storage medium of claim 23 where said obtained base
2 document in said step (c) allows a substantial optimization of an aspect of at least
3 one of said steps (d) and (e).

1 28. The computer-readable storage medium of claim 23 where said base document
2 exhibits an enhanced suitability to be a reference for multiple future document
3 requests by virtue of being a function of many past document requests.

1 29. The computer-readable storage medium of claim 23 where said created base
2 document includes a plurality of frequently requested components from
3 documents associated with said obtained class.

1 30. The computer-readable storage medium of claim 23 where said base document
2 substantially lacks content which is confidential to any particular user.

1 31. The computer-readable storage medium of claim 23 where said base document
2 has not necessarily been previously requested by said user.

1 32. A condenser located between, and configured to improve network efficiency of
2 document transmission between, a content server and a user, comprising:
3 (a) an input interface configured to receive a request from a user for a
4 document,
5 (i) said requested document being referencable with respect to a base
6 document associated with a class;
7 (b) a class tracking module configured to automatically obtain said class;
8 (c) a document database configured to automatically obtain and provide said
9 base document associated with said class;
10 (d) a condensation engine configured to create a condensed document by
11 abbreviating redundancy in said requested document relative to said base
12 document; and
13 (e) an output interface configured to transmit said condensed document to
14 said user to enable said user to reconstruct said requested document.

1 33. The condenser of claim 32 deployed on the same network domain as said content
2 server.

1 34. The condenser of claim 32 where said base document has not necessarily been
2 previously requested by said user.

1 35. A system for efficient document transmission between a content server and a user,
2 comprising: (a) the condenser of claim 32; and (b) at least one content server
3 containing said requested document of claim 32.

1 36. A condenser for improving downstream network efficiency, said condenser
2 comprising:
3 (1) a processor;

- (2) a memory connected to said processor storing a program to control the operation of said processor;
- (3) the processor operative with said program in said memory to:
 - (a) (i) receive a user's request for a document,
 - (ii) said requested document being referencable with respect to a base document associated with a class;
 - (b) automatically obtain said class;
 - (c) automatically obtain said base document associated with said class;
 - (d) create a condensed document by abbreviating redundancy in said requested document relative to said base document; and
 - (e) transmit said condensed document to said user to enable said user to reconstruct said requested document.

37. A method for preparing and transmitting a document from a content server to a user, comprising the steps of:

- (a) receiving a request for a dynamic document to be sent to a user;
- (b) obtaining an updated version of the requested document;
- (c) searching a class database to determine whether the requested document can be a member of any of a plurality of current classes;
- (d) determining at least one of said classes to serve as a reference for said requested document;
- (e) extracting a base document associated with said reference class;
- (f) generating a condensed document reflecting the difference between said requested document and said class base file by performing a delta-encoding process; and
- (g) transmitting said condensed document to said requester.

38. The method of claim 37 where:

- (i) it is determined in said step (c) that the requested document cannot be a member of any current class;

- (ii) creating a new class based upon the requested document; and
- (iii) storing the requested document in the class database as a base document for that class.

1 39. The method of claim 37 where said base document has not necessarily been
2 previously requested by said user.